REMARKS

Claims 1 to 4 are in this application. Claims 3 and 4, which had been withdrawn from consideration as being drawn to a non-elected invention, are canceled. New claims 5-6 have been added. Claims 1-2 and 5-6 are currently pending in this application.

Claims 1 and 2 have been amended.

Applicants have amended claim 1 to clarify that the particles of high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater according to the present invention are spherical particles. Thus, what is claimed is:

"Spherical particles of high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater."

Claim 2 has been amended to reflect the amendments to claim 1.

New claims 5-6 have been added to define that the spherical particles according to the present invention are prepared by a unique process as defined in claims 5-6, which produces novel spherical particles of high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater.

Support for the claims 5-6 is found in canceled claims 3 and 4, and on page 6, line 22 to page 7, line 7, and elsewhere in the specification.

Applicants acknowledge the withdrawal of:

(1) the rejection under 35 U.S.C. § 102(b) as being anticipated by JP 10-316431 to Matsubara et al. (here after Matsubara et al.);

(2) the rejection under 35 U.S.C. § 103(a), as being unpatentable over Ikoma et al. (U.S. Patent No. 5,700,596) in view of Kimura et al. (JP 10-081521); and

(3) the rejection under 35 U.S.C. § 103(a), as being unpatentable over Matsubara et al. (JP 10-316431) in view of Kimura et al. (JP 10-081521) or Ikoma et al. (U.S. Patent No. 5,700,596).

However, claims 1 and 2 remain rejected under 35 U.S.C. § 102(b), as being anticipated by Ikoma et al. (U.S. Patent No. 5,700,596).

Applicants have amended claims 1 and 2 to claim "spherical particles of high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater."

The particles of high density cobalt-manganese coprecipitated nickel hydroxide according to the present invention are **spherical**. They **do not contain non-spherical particles** because they are manufactured by a novel process, which provides total control of the shape of the particles as they coprecipitate from the reaction mixture.

Therefore, the rejection of claims 1 and 2 under 35 U.S.C. § 102(b), as being anticipated by Ikoma et al. (U.S. Patent No. 5,700,596) should be withdrawn and claims 1 and 2 should be allowed.

As mentioned above, new claims 5-6 have been added to define that the spherical particles according to the present invention are prepared by a unique process as defined in claims 5-6, which produces novel spherical particles of high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater.

Thus, the novel particles produced by the process defined in claims 5-6 are **spherical.** Further, the particles according to claims 5-6 of the present invention **do not contain non-spherical particles** (see Fig. 1).

This unique property has neither been taught nor suggested by the prior art.

Applicants submit that this unique property is the result of the fact that the claimed particles are formed by a novel process which provides total control over the shape of the particles as they coprecipitate from the reaction mixture.

On page 6, line 22 to page 7, line 7, the specification states:

> "With pH control alone, decomposition and evaporation of ammonia alters the ammonium ion concentration in the solution, such that generation of crystal nuclei produced from the ammonium complex salt becomes unstable. Only by controlling the ammonium ion concentration of the solution does generation of crystal nuclei become constant, so that uniform growth of particles occurs. In order to maintain such a mechanism, the ammonium ion source and alkali metal hydroxide must consistently match the necessary amount of metal ion, and therefore the reaction process is preferably carried out in a continuous manner. By speeding up the stirring rate, an abrading effect also occurs between the particles, and this repeated abrasion and growth result in fluidized, spherical high density particles."

Therefore, the newly presented claims 5-6 are novel and unobvious and, as such, claims 5-6 are allowable.

The spherical particles according to the present invention are high density cobalt-manganese coprecipitated nickel hydroxide with a tapping density of 1.5 g/cc or greater, and are represented by the formula:

$$(Ni_{(1-x-y)}Co_xMn_y)(OH)_2$$

wherein $1/10 \leq x \leq 1/3$ and $1/20 \leq y \leq 1/3$.

These spherical particles are prepared by a process, which includes the steps of:

continuously supplying an aqueous solution of a nickel salt which contains a cobalt salt and a manganese salt of a complexing agent and an alkali metal hydroxide into a reactor either in an inert gas atmosphere or in the presence of a reducing agent;

continuously growing crystals of said particles; and

continuously removing crystals of said particles from said reactor.

On page 3, line 24 to page 4, line 3, in the section entitled "DETAILED DESCRIPTION OF THE INVENTION," the specification states:

> "The cobalt-manganese coprecipitated nickel hydroxide of the invention is characterized by having high density, and specifically, a density of 1.5 g/cc or greater. The specific surface area of the cobalt-manganese coprecipitated nickel hydroxide of the invention is in the range of 8-20 m^2/g, and as shown in FIG. 1 it is spherical with a mean particle size in the range of 5-20 μm."

On page 6, line 22 to page 7, line 7, the specification further states:

> "With pH control alone, decomposition and evaporation of ammonia alters the ammonium ion concentration in the solution, such that generation of crystal nuclei produced from the ammonium complex salt becomes unstable. Only by controlling the ammonium ion concentration of the solution does generation of crystal nuclei become constant, so that uniform growth of particles occurs. In order to maintain such a mechanism, the ammonium ion source and alkali metal hydroxide must consistently match the necessary amount of metal ion, and therefore the reaction process is preferably carried out in a continuous manner. By speeding up the stirring rate, an abrading effect also occurs between the particles, and this repeated abrasion and growth result in fluidized, spherical high density particles."

Referring to FIG. 1, it can be seen that the particles according to the present invention are **spherical.** It can also be seen from Fig. 1 that the particles according to the present invention **do not contain non-spherical particles.**

This unique property is the result of the fact that the claimed particles are manufactured by a process that provides total control over the shape of the particles as they coprecipitate from the reaction mixture.

Furthermore, the particles according to the present invention **do not contain non-spherical particles** because they are manufactured by a unique process, which provides total control of the shape of the particles as they coprecipitate from the reaction mixture.

Therefore, the spherical particles prepared by the above process are novel and unobvious and, as such, are patentable.

Based on the foregoing, Applicants respectfully request reconsideration of the present application and allowance of the pending claims, namely, claims 1-2 and newly presented claims 5-6.

An early issuance of a Notice of Allowability is earnestly solicited.

Respectfully submitted,

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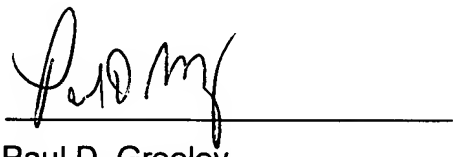
By: 

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